

# POST SINGULATION DIE SEPARATION APPARATUS AND METHOD FOR BULK FEEDING OPERATION

## ABSTRACT OF THE DISCLOSURE

5 A post singulation, die separation assembly for bulk separation of a plurality of dice in  
a singulated wafer from the adhesive backing of wafer saw tape. The die separation  
assembly includes a support base having a support surface, a first portion and an  
opposite second portion thereof. The second portion includes a down-ramped portion  
thereof skewed downwardly at a first acute angle from the support surface. A feed  
10 tray includes a collection end positioned adjacent the base second portion such that an  
elongated, substantially thin gap is formed between the tray collection end and at least  
a portion of the base second portion. A flexible platform is movably supported atop  
the base support surface for movement from the first portion to the second portion  
thereof. At the second portion, the platform passes downward through the gap formed  
15 between the tray collection end and the at least a portion of the base second portion.  
The platform defines an upward facing surface upon each die of the singulated wafer  
is adhered thereto, via the saw tape, in a forward aligned manner. Upon movement of  
the flexible platform down the down-ramped portion of the support base, a portion of  
the wafer saw tape thereat is peeled away from the respective die. The tape is the  
20 separated from the dice, releasing the respective dice onto the collection end of the  
feed tray in a manner substantially maintaining their forward alignment orientation of  
thereof.